

## AMENDMENT

Please replace all prior versions and listings of claims in the Application with the following Listing of Claims.

### LISTING OF CLAIMS

1. (Cancelled)

2. (Currently Amended) A method, comprising:

storing at least a portion of sound data in a memory buffer of a computer, wherein the sound data is to be analyzed by a processor to output a haptic effect from the analyzed sound data;

dividing at least a portion of the sound data into a plurality of frequency ranges, at least one of the frequency ranges associated with a periodic haptic effect;

~~computing an average of sound magnitudes in each frequency range;~~

analyzing each frequency range by the processor to determine one or more sound features corresponding to at least one of the frequency ranges; and

triggering execution of ~~executing~~ at least one haptic effect based on the determined one or more sound features ~~having a sound magnitude above a threshold value from the average.~~

3. (Cancelled)

4. (Previously Presented) The method of claim 2 wherein the portion of sound data is divided into a plurality of frequency ranges by applying a plurality of filters to the portion of sound data.

5. (Previously Presented) The method of claim 4, the plurality of filters having at least:

a low-pass filter; and

a high-pass filter.

6. (Previously Presented) The method of claim 4, the analyzing including separating the portion of sound data into a plurality of frequency components associated with a plurality of frequency ranges using a fast Fourier transform (FFT).

7. (Previously Presented) The method of claim 6, wherein a number of outputs from the fast Fourier transform are grouped to provide sound features associated with each frequency range from the plurality of frequency ranges.

8-9. (Cancelled)

10. (Previously Presented) The method of claim 2, wherein the at least one haptic effect was previously mapped to the at least one sound feature.

11-21. (Cancelled)

22. (Currently Amended) A computer readable medium encoded with a computer program having code capable of being read by a processor, the code comprising:  
code to store at least a portion of sound data in a memory buffer of a computer wherein the sound data is to be analyzed by a processor to output a haptic from the analyzed sound data;

code to divide at least a portion of sound data into a plurality of frequency ranges, at least one of the frequency ranges associated with a periodic haptic effect;

~~code to compute an average of sound magnitudes in each frequency range;~~

code to cause the processor to analyze each frequency range to determine one or more sound features corresponding to at least one of the frequency ranges; and

code to trigger execution of ~~execute~~ at least one haptic effect based on the determined one or more sound features ~~having a sound magnitude above a threshold value from the average.~~

23. (Previously Presented) The computer readable medium of claim 22, wherein at least one haptic effect is associated with the at least one frequency component.

24. (Previously Presented) The computer readable medium of claim 22 wherein the portion of sound data is divided into a plurality of frequency ranges by applying a plurality of filters to the portion of sound data.

25. (Previously Presented) The computer medium readable of claim 24, the code to analyze including code to separate the portion of sound data into a plurality of frequency components associated with a plurality of frequency ranges using a fast Fourier transform (FFT).

26. (Cancelled)

27. (Previously Presented) The computer readable medium of claim 22, wherein the at least one haptic effect was previously mapped to the at least one sound feature.

28. (Currently Amended) An apparatus, comprising:

means for storing at least a portion sound data in a memory buffer of a computer, wherein the sound data is to be analyzed by a processor to output a haptic effect from the analyzed sound;

means for dividing at least a portion of sound data into a plurality of frequency ranges, at least one of the frequency ranges associated with a periodic haptic effect;

~~means for computing an average of sound magnitudes in each frequency range;~~

means for analyzing each frequency range to determine one or more sound features corresponding to at least one of the frequency ranges, wherein said means for analyzing is performed by the processor; and

means for triggering execution of ~~executing~~ at least one haptic effect based on the determined one or more sound features ~~having a sound magnitude above a threshold value from the average.~~

29. (New) The method of claim 1, further comprising:

computing an average of sound magnitudes in each frequency range,  
wherein the determined one or more sound features have a sound magnitude above  
a threshold value from the average.

30. (New) The computer readable medium of claim 22, the code further comprising:  
code to compute an average of sound magnitudes in each frequency range,  
wherein the determined one or more sound features have a sound magnitude above  
a threshold value from the average.

31. (New) The apparatus of claim 28, further comprising:  
means for computing an average of sound magnitudes in each frequency  
range, wherein the determined one or more sound features have a sound magnitude  
above a threshold value from the average.